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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,415	04/19/2006	Hiroyuki Katsuno	Q94519	2349
23373 7590 07/31/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER FISCHER, JUSTIN R	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 07/31/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/576,415

**Applicant(s)**

KATSUNO, HIROYUKI

**Examiner**

Justin R. Fischer

**Art Unit**

1791

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oura (JP 2001180234). As best depicted in Figure 1, Oura teaches a pneumatic tire construction comprising a runflat insert 9 disposed inward of a carcass structure 5 and a steel cord reinforcing layer 10 arranged along a carcass turnup portion 5b. The reference further teaches that the steel cord reinforcing layer has an end count of at least 20 cords per 50 millimeters (Paragraph 22 of attached machine translation). Based on this end count, the cords can be spaced by as much as 2.5 mm (1 cord/2.5 mm). Additionally, the filaments of said steel cord can have a diameter between 0.15 and 0.40 millimeters (Paragraph 22). While the reference fails to expressly relate the cord diameter and the cord spacing, one of ordinary skill in the art at the time of the invention would have readily appreciated the broad range of the claimed invention in view of the general disclosure noted above. For example, given a spacing of 2.5 mm, the cord diameter would have to be less than 1.0 mm to satisfy the claimed range- such a cord diameter is consistent with steel cords comprised of the disclosed filaments and those used in bead reinforcing layers. As such, one of ordinary skill in the art at the

time of the invention would have found it obvious to form the steel cord reinforcing layer of Oura with a cord spacing in accordance to the claimed invention.

As to the shear rigidity, given the similarity in bead constructions (reference and claimed invention), one of ordinary skill in the art at the time of the invention would have expected the tire of Oura to demonstrate a shear rigidity in accordance to the claimed invention. In particular, the bead reinforcing layer of Oura is similarly (a) formed of steel cords having an inclination angle between 40 and 70 degrees with respect to the meridional segment of the tire and (b) positioned between a bead filler and a carcass turnup and contains a radially outer end between 0.30 and 0.50 times the tire section height. Additionally, Oura describes a cord spacing which can be as high as 2.5 mm and such a spacing describes a plurality of embodiments in which the spacing is at least 2.5 times the cord diameter (requires a cord diameter below 1.0 mm, which is consistent with the teachings of Oura to include at least 2 filaments having a diameter between 0.15 and 0.40 mm). Lastly, it is noted that applicant (Paragraph 7) suggests that the claimed in plane shear rigidity is directly related to the aforementioned relationship between the cord diameter and the cord spacing and thus, the claimed rigidity would be expected to be present in the tire of Oura (given its disclosure of embodiments satisfying the claimed relationship).

Lastly, with respect to the independent claim, the results of Table 1 do not provide a conclusive showing of unexpected results for the claimed cord spacing. In particular, it is unclear if the realized benefits are a product of the specific cord used in the respective tire constructions (e.g. would the same benefits be realized if a different

steel cord was used). In order to demonstrate a criticality for the claimed cord spacing, it is suggested that applicant conduct multiple experiments using a variety of cord constructions (claim as currently drafted is generic to the steel cord and applicant must demonstrate that the realized benefits are unrelated to the cord construction).

Regarding claim 2, given the example disclosed above, the cord diameter would have to be less than or equal to 0.5 mm- such a cord diameter is consistent with steel cords comprised of the disclosed filaments and those used in bead reinforcing layers.

With respect to claims 3 and 4, the metallic filaments in Oura are described as having an elastic modulus of at least 16,000 MPa (Paragraph 8 of attached machine translation). Given such a disclosure, one of ordinary skill in the art at the time of the invention would have readily appreciated a wide range of high elongation steel cords, including that required by the claimed invention. It is further noted that Table 2 is not seen to provided a conclusive showing of unexpected results for the specific cord because it is unclear if such benefits are realized in additional constructions in accordance to the claimed invention (e.g. different cord angle or different radial width). It is suggested that applicant provide additional results that clearly set forth the criticality of the claimed cord construction.

As to claim 5, the steel cord reinforcing layer of Oura is (a) arranged between a bead filler 8 and a carcass turnup 5b and (b) disposed in a radial zone ranging from the contact point (with the rim) to the height of the maximum section width (see Figures).

Regarding claim 6, the steel cord reinforcing layer of Oura has a radial width equal to 0.30-0.50 times the tire section height, which is extremely similar to the claimed

range between 0.20 and 0.48 times the tire section height. Also, such constructions would have a radially outer end that is radially inward of a height equal to 0.50 times the tire section height.

With respect to claim 8, the steel cord reinforcing elements used to form layer 10 are inclined between 40 and 80 degrees with respect to the longitudinal direction of the radial carcass cords (Paragraph 15).

### ***Response to Arguments***

3. Applicant's arguments filed June 20, 2008 have been fully considered but they are not persuasive.

Applicant argues that Oura does not disclose the claimed shear rigidity and moreover, the present invention according to claim 1 largely differs from Oura in construction, effect, and technical concepts, and thus it involves an inventive step over Oura.

First, as detailed by applicant (Page 5 of response- 1<sup>st</sup> Paragraph), an exemplary embodiment of the present invention provides a pneumatic radial tire capable of effectively improving, among other things, runflat durability. Oura is similarly directed to a pneumatic tire construction that provides improved runflat durability and similarly includes a runflat insert inward of a carcass structure and a bead reinforcing layer between a bead filler and a carcass turnup- thus it is unclear how the reference "differs largely" in construction, effect, and technical concepts. As detailed above, the spacing, materials, and arrangement of the bead reinforcing layer are extremely similar to that of the claimed invention and thus, one of ordinary skill in the art at the time of the invention

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would have expected the tire of Oura to demonstrate the claimed shear rigidity. It is particularly noted that applicant specifically relates the claimed shear rigidity to the relationship between the cord spacing and cord diameter (Paragraph 7). Thus, given the wide variety of embodiments in Oura that satisfy the claimed relationship, one of ordinary skill in the art at the time of the invention would have expected the tire of Oura to demonstrate the claimed shear rigidity. It is emphasized that the steel cord of Oura comprises at least two filaments having a diameter between 0.15 and 0.40 mm and such a disclosure describes a plurality of cord constructions having a diameter of less than 1.0 mm (given a cord spacing of 2.5 mm, such cords satisfy the claimed spacing/diameter relationship). It is further noted that Oura is directed to additional constructions in which the cord spacing is less than 2.5 mm (end counts greater than 20 cords per 50 mm)- in these instances, Oura describes a wide variety of cord constructions, as set forth above, that satisfy the claimed relationship between the cord spacing and the cord diameter.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Justin Fischer

/Justin R Fischer/

Primary Examiner, Art Unit 1791

July 29, 2008